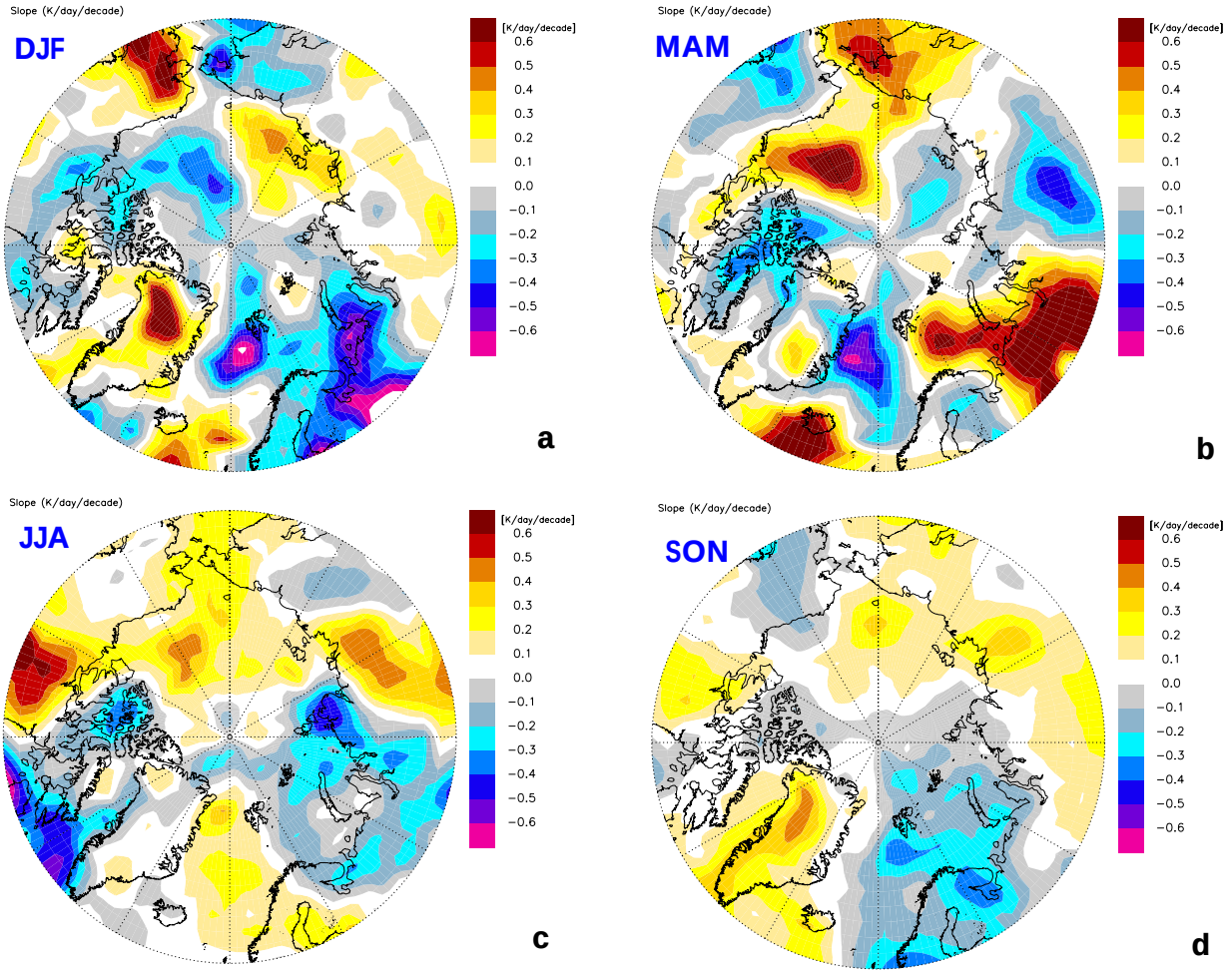
19-Year Trends in Advective Sensible Heating



Path-P-derived 19-year trends (K day^{-1} decade^{-1}) in heating resulting from the poleward sensible heat convergence for (a) winter (DJF), (b) spring (MAM), (c) summer (JJA), and (d) fall (SON). Data are for the deep layer between 1000 and 300 mb. Note increased heating is evident during all seasons in the E. Siberian Sea where observed sea ice extent has decreased, and a slight cooling has occurred near the Canadian Archipelago where ice has increased. Strong warming west of Novaya Zemlya in spring may contribute to observed ice reduction in this area. Basin-wide, areas of warming are offset by areas of cooling for no significant net change overall. Are these trends caused by changes in winds or thickness gradients, or both?